

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>41 935. : .sev</b>	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. <b>PCT/EP2004/006760</b>	International filing date ( <i>day/month/year</i> ) <b>23.06.2004</b>	Priority date ( <i>day/month/year</i> ) <b>22.07.2003</b>
International Patent Classification (IPC) or national classification and IPC <b>B21B28/04, A46B9/02</b>		
Applicant <b>SMS DEMAG AKTIENGESELLSCHAFT</b>		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a. ☒ (sent to the applicant and to the International Bureau) a total of 8 sheets, as follows:

☒ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) \_\_\_\_\_, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

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International application No.

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Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This report is based on translations from the original language into the following language \_\_\_\_\_ which is the language of a translation furnished for the purposes of:
    - ☐ international search (Rule 12.3 and 23.1(b))
    - ☐ publication of the international application (Rule 12.4)
    - ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
  - ☐ the international application as originally filed/furnished
  - ☒ the description:
    - pages 2, 3, 7, 8 as originally filed/furnished
    - pages\* 1, 4-6, 6a received by this Authority on 20.01.2005 with letter of 19.01.2005
    - pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
  - ☒ the claims:
    - nos. 9, 10 as originally filed/furnished
    - nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19
    - nos.\* 1-8 received by this Authority on 20.01.2005 with letter of 19.01.2005
    - nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
  - ☒ the drawings:
    - sheets 1/4-4/4 as originally filed/furnished
    - sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
    - sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
  - ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
  - ☐ the description, pages \_\_\_\_\_
  - ☐ the claims, nos. \_\_\_\_\_
  - ☐ the drawings, sheets/figs \_\_\_\_\_
  - ☐ the sequence listing (*specify*): \_\_\_\_\_
  - ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
  - ☐ the description, pages \_\_\_\_\_
  - ☐ the claims, nos. \_\_\_\_\_
  - ☐ the drawings, sheets/figs \_\_\_\_\_
  - ☐ the sequence listing (*specify*): \_\_\_\_\_
  - ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	1-8	YES
	Claims		NO
Inventive step (IS)	Claims	1-8	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-8	YES
	Claims		NO

## 2. Citations and explanations (Rule 70.7)

1. This report makes reference to the following documents:

D1: JP 52 092855 A (HITACHI LTD), 4 August 1977 (1977-08-04)

D2: US-A-2 953 952 (ALEXANDER GEORGE O), 27 September 1960 (1960-09-27)

2. The features claimed in lines 5-6 of claim 2 do not restrict the subject matter of claim 2 because the shape of the first object (the brush) is defined by general reference to the corresponding shapes of a second object (the cylinder) which is not part of the first claimed object.

3. **Nevertheless**, if lines 5-10 of claim 5 were added to the characterising part of claim 2, these features, together with the features claimed in lines 5-6 of claim 2, would restrict the subject matter of claim 2, even if these features define the claimed brush in terms of the result to be achieved, because the invention can only be described in this manner.

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4. Consequently, claim 2 is examined with the following wording:

"cleaning brush for use in metal, in particular aluminium, hot strip mills, and having a brush covering (2), **characterised in that** the brush or brush covering (2) has a contour which is so closely adapted to the contour of the cylinders, in particular of the working cylinder (4), that a substantially uniform contact pressure is set between the cylinder and cleaning brush or brush covering over the surface length of the cylinder, preferably in the zone of the strip width on the cylinder, with the minimum compression force  $F_b$  necessary to achieve an adequate cleaning effect (figure 4a), and in that the brush or brush covering has the contour of any polynomial, exponential function, angular function or the like."

5. The above-mentioned claim 2 meets the requirements of PCT Article 33(2) and 33(3) for novelty and inventive step:

1. Document D1, which is considered to represent the closest prior art, discloses (cf. figure 6) a cleaning brush from which the subject matter of claim 2 differs in that "the brush or brush covering has a contour which is so closely adapted to the contour of the cylinders, in particular of the working

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

cylinder, that a substantially uniform contact pressure is set between the cylinder and the cleaning brush or brush covering over the surface length of the cylinder, preferably in the zone of the strip width on the cylinder, with the minimum compression force  $F_b$  necessary to achieve an adequate cleaning effect."

The subject matter of claim 2 is therefore novel (PCT Article 33(2)).

2. The subject matter of claim 2 involves an inventive step because the prior art neither discloses nor suggests adapting the contour of the cleaning brush to the contour of the cylinder in order to achieve a substantially uniform contact pressure over the surface length of the cylinder (PCT Article 33(3)).

6. Claims 3 and 4 are dependent on claim 2 and therefore also meet the requirements of PCT Article 33(2) and 33(3) for novelty and inventive step.

7. The subject matter of claim 1 relates to a conventional process for producing cleaning brushes as per claim 2 having all the claimed features of these brushes. Consequently, *mutatis mutandis*, the same objections can be raised against claim 1 as against claim 2.

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
8.	<p data-bbox="409 359 1299 436">Claim 5 meets the requirements of PCT Article 33(2) and 33(3) for novelty and inventive step:</p> <p data-bbox="409 506 1360 930">1. Document D2, which is considered to represent the closest prior art, discloses (cf. claims 1 and 3) a process from which the subject matter of claim 5 differs in that the process achieves a uniform contact pressure in the zone of the strip width by adapting the shape of the cleaning brush, instead of controlling the contact pressure at the ends of the cylinder.</p> <p data-bbox="503 999 1302 1077">The subject matter of claim 5 is therefore novel (PCT Article 33(2)).</p> <p data-bbox="409 1146 1341 1373">2. The subject matter of claim 5 involves an inventive step because the prior art neither discloses nor suggests the process as per claim 5 for operating a cleaning brush (PCT Article 33(3)).</p> <p data-bbox="292 1442 1341 1570">9. Claims 6-8 are dependent on claim 5 and therefore also meet the requirements of PCT Article 33(2) and 33(3) for novelty and inventive step.</p>